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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/581,497	06/02/2006	Babak Heidari	AOBDP0105US	3831
23908 7590 05/04/2010 RENNER OTTO BOISSELLE & SKLAR, LLP 1621 EUCLID AVENUE NINETEENTH FLOOR CLEVELAND, OH 44115				
EXAMINER				
BROWN IL, DAVID N				
ART UNIT		PAPER NUMBER		
1791				
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05/04/2010		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/581,497

Applicant(s)

HEIDARI ET AL.

Examiner

DAVID N. BROWN II

Art Unit

1791

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 February 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) 15-27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☒ Claim(s) 15-27 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/GS-06)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date 12/31/2009 12/31/2009 12/16/2009 12/02/2009

DETAILED ACTION

This is a final action in response to the claims dated 02/22/2010.

Election/Restrictions

1. Applicant's election with traverse of group 1, claims 1-14 in the reply filed on 02/22/2010 is acknowledged. The traversal is on the ground(s) that the examiner has misunderstood the invention. This is not found persuasive because upon further review, it is determined that the process does not require the limitation of having a cavity with a first wall.

The requirement is still deemed proper and is therefore made FINAL.

Claim Objections

2. Claims 15-27 are objected to because of the following informalities: The claims should be labeled as withdrawn. Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 2003/0159608 (Heidari) in view of US 6,334,960 (Wilson).

Heidari teaches an apparatus for transferring a pattern from a template having a structured surface (fig. 1, 10) to a substrate carrying a surface layer of a radiation polymerisable fluid (fig. 1, 5a), said apparatus comprising a first main part and a second main part having opposing surfaces (fig. 1), means for adjusting a spacing between said main parts (fig. 1), support means for supporting said template and substrate in mutual

parallel engagement in said spacing with said structured surface facing said surface layer (fig. 1,3, 4), a radiation source devised to emit radiation into said spacing (fig. 7, R'), a cavity having a first wall comprising a flexible membrane devised to engage said template or substrate (fig. 1,9), and means for applying an adjustable overpressure to a medium present in said cavity (fig. 1, 12, Paragraph 44) using a gas at an adjustable pressure between 1-500 bar ("liquid or gas...1-500 bar (excess pressure), preferably 1-200 bar"; par. 14). The Examiner is noting that Applicant has claimed in claim 1, means for adjusting a spacing between said main parts, means for supporting said template and substrate in mutual alignment and means for applying an adjustable overpressure to a medium present in a cavity. Each of these limitations has been claimed in means plus function form and thus, is interpreted by the Examiner as an invocation of 35 U.S.C. 112, 6th paragraph. The means for adjusting a spacing between said main parts is identified as a piston member attached at its outer end to a plate, wherein the piston member is displaceably linked to a cylinder which is preferably held in fixed relation to said first main part (page 10 of the Specification) and equivalents thereof. Thus, because the primary reference of Heidari teaches that the substrate and template are displaced towards each other by a drive means (paragraph 0056), Heidari teaches the means for adjusting a spacing as claimed.

With respect to the means for supporting said template and substrate, such means are interpreted as a support structure in the form of a plate as noted in the Specification and equivalents thereof which perform the function of supporting the template and substrate in the similar manner. Thus, because the primary reference of Heidari teaches a support

plate for both the template and substrate, Heidari teaches such support means as claimed. Lastly, with respect to the means for adjusting an overpressure, such means are interpreted as a conduit connectable to a pressure source per the Specification and equivalents thereof which can perform the function of adjusting an overpressure in the similar manner. Thus, because the primary reference of Heidari teaches an inlet channel which allows the medium in the cavity to increase via the introduction of a pressure medium, Heidari teaches the means for adjusting an overpressure as claimed.

Heidari teaches the aspects of applicant's invention previously described but does not teach the membrane is transparent to a wavelength range of the radiation, the radiation source being positioned behind said membrane. Wilson teaches an apparatus (30) for transferring a pattern from a template having a structured surface (40) to a substrate (10) carrying a surface layer of a radiation polymerisable fluid (column 3 lines 51-56) said apparatus comprising a first main part and a second main part having opposing surfaces (40 and 10) means for adjusting a spacing between said main parts support means for supporting said template and substrate in mutual parallel engagement in said spacing with said structured surface facing said surface layer (column 4 lines 10-16) a radiation source devised to emit radiation, for solidifying said layer (column 4 lines 35-39) into said spacing, a cavity having a first wall (column 4 lines 13-15), comprising a flexible membrane devised to engage said template or substrate (transfer layer, column 3 lines 9-22 made of flexible material) wherein said membrane is transparent to a wavelength range of said radiation, said radiation source being positioned behind said

membrane (transfer layer, column 3 lines 9-22 made of transparent material). Both Heidari and Wilson are dedicated to similar processes using similar materials (Wilson envisions the use of methacrylates in column 3 lines 40-49). It would have been obvious to one having ordinary skill in the art at the time of the invention to use radiation transparent materials motivated by a desire to have the radiation penetrate the desired layers and accomplish its intended purpose. It would have also been obvious to one having ordinary skill in the art at the time of the invention to position the radiation source in such a place wherein it may accomplish its intended use.

Claim 2:

Heidari teaches the use of a gas [0014].

Claim 3:

Heidari does not teach that the gas comprises air. It would have been obvious to one having ordinary skill in the art at the time of the invention to use or try air as a medium. Since air is freely available, and the use of a gas is taught, one would be so motivated by a desire to use such an available source of gas.

Claim 4:

Heidari teaches that the pressure can be adjusted within this range [0014].

Claim 5:

Heidari demonstrates the claimed shape of such an apparatus in figure 1. Element 9 is described as a flexible membrane member and it protrudes from the first main part surface and the seal (11) engages the membrane.

Claim 6:

Heidari teaches that the membrane (9) is disconnectable from the seal member and also engages the seal member when pressure is applied [0043]

Claim 8:

It would have been obvious to one having ordinary skill in the art at the time of the invention to use radiation transparent materials motivated by a desire to have the radiation penetrate the desired layers and accomplish its intended purpose. It would have also been obvious to one having ordinary skill in the art at the time of the invention to position the radiation source in such a place wherein it may accomplish its intended use.

Claim 9:

Heidari teaches the use of such a material (Si/SiO₂) [0061]. Also, Wilson teaches the use of such materials (column 3 lines 51-57).

Claim 10:

Heidari does not teach the use of radiation within this range. Wilson teaches the use of UV radiation which is within the range claimed (column 4 lines 35-47).

Claim 11:

Heidari teaches the use of a radiation emitting device. Wilson teaches the operation of such a device at the desired wavelength. Therefore the device envisioned in the combination of Wilson and Heidari would be capable of emitting such radiation with such a pulse duration and pulse rate.

Claim 12:

Heidari teaches that the membrane comprises a rubber material [0042]. Rubbers are polymers.

Claim 13:

Heidari teaches a diameter of from 50-350mm [0042].

Claim 14:

Since the membrane is present in the invention of Heidari as previously described, it can therefore be taken to be the substrate as claimed; it is flexible.

Response to Arguments

5. Applicant's arguments filed 02/22/2010 have been fully considered but they are not persuasive.
6. Applicant's argument that Heidari fails to teach or suggest a radiation polymerizable fluid used as a surface layer on the substrate and a radiation source devised to emit radiation for solidifying the surface layer, the radiation emitted into the spacing between the first and second main parts has been considered but it is moot in view of the new grounds of rejection.
7. Applicant's argument that Heidari fails to teach or suggest emitting radiation to the surface layer through the membrane, which membrane is transparent to a wavelength range of a radiation usable for solidifying the fluid surface layer has been considered but it is moot in view of the new grounds of rejection.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID N. BROWN II whose telephone number is (571)270-5497. The examiner can normally be reached on Monday-Thursday 7:30a-5:00p EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Del Sole can be reached on (571)-272-1130. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/DAVID N. BROWN III/
Examiner, Art Unit 1791

/Joseph S. Del Sole/
Supervisory Patent Examiner, Art Unit 1791